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### Policy

The U. S. Navy Medical News Letter is basically an official Navy Medical Department publication inviting attention of the officers of the Medical Department of the Regular Navy and Naval Reserve to timely up-to-date official or professional sources, pertaining to medicine, dentistry, and allied sciences. The purpose of the News Letter is to permit those officers to keep themselves informed of new and recent developmental sources in all the fields of medicine, dentistry, and allied sciences. Reference to or descriptions of any source are designed to indicate scope necessary to inform doctors, dentists, or allied scientists in that particular field of existence and source by authors, magazines, reports, or periodicals in which scientific information may be found. The form in which the items are described is neither intended to be nor susceptible to use by any officer as a substitute for the article or item in its original form and shall not be construed as such under any circumstances. All readers of the News Letter are urged to obtain the original source indicated from ship or station medical library in any cases which seem to concern the specialized interests of the particular scientist. The Editor of the News Letter is extremely careful always to quote source, title, and author of the information used except perhaps information obtained from unclassified official documents.

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### Effects of Regitine

Regitine, 2-(N-p'-tolyl-N-(m'-hydroxyphenyl)-aminomethyl)-imidazoline HCl, (C-7337), is an antiadrenergic drug first developed by Marxer and Miescher in 1947. Its pharmacologic properties were reported by Meier and Yonkman as being adrenolytic in small doses and sympatholytic in higher concentrations, the latter being reported as greater than that of Priscoline, a progenitor in the imidazoline series. These antiadrenergic properties were tested in man by Hecht, Crandall, and Samuels who obtained similar results and added the assumption of local vasodilatation. Studies on normal students show that Regitine has an efficacy similar to Priscoline in relieving vasospasm induced by cold. It was believed, therefore, that clinical trial of the drug was justified and this report deals with the results of that trial conducted over an 18-month period. The maximum duration of therapy for any one patient was 14 months, though many are continuing therapy. Most of the patients were given skin temperature studies, testing the drug intravenously, just as were the students. In the clinical evaluation of the drug, it was administered orally and a comparison made between the actual therapeutic response and the initial response to the intravenous injection.



Thirty-four patients were studied. They were divided into 4 groups according to diagnosis in order to evaluate the results of Regitine therapy in those particular disease states. Group I was composed of 10 patients, 5 females and 5 males varying in age from 20 to 60 years, with the diagnosis of Raynaud's disease.

Group II was composed of 14 patients with the diagnosis of arteriosclerotic peripheral vascular disease and was made up of 13 males and 1 female varying in age from 46 to 83 years.

Group III was composed of 3 patients, all males, aged 40, 41, and 63 years, with the diagnosis of thromboangiitis obliterans.

Group IV was composed of 7 females ranging in age from 21 to 50 years with miscellaneous disorders varying from anxiety to acute pancreatitis.

The patients were first tested with Regitine intravenously while skin temperatures were recorded, in order to ascertain the effect of the drug on the peripheral circulation of the patient. The response shown, and, in many cases, compared with a skin temperature study with Etamon, was used to predict the therapeutic response to Regitine.

Regitine was administered orally in doses ranging from 30 mg. once a day to 120 mg. four times a day. The maximum duration of trial was 14 months and the minimum was 2 weeks. Evaluation of the response was largely subjective, but in many, objective evidence was present.

The patients in the arteriosclerotic group appeared to obtain more benefit from the oral administration of the drug than did the Raynaud group. Results in the thromboangiitis group and in 1 patient with chronic thrombophlebitis were encouraging.

Serious side effects were few, the only reaction of any magnitude being vasomotor collapse which occurred in 2 of the 34 patients receiving the drug; however, minor side effects were noted by 62% of the patients.

Regitine appears to be a useful adjunct to treatment of peripheral vascular diseases and is thought to be indicated prior to consideration of sympathectomy. It is useful in subsequent treatment of cases which have undergone sympathectomy. (Circulation, Apr. 1953, H. D. Green and W. T. Grimsley)

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#### Heparin Treatment of Angina Pectoris

The object of this study was to test the efficacy of the heparin treatment of angina pectoris. The patients treated were suffering from typical angina pectoris, provoked by the known factors and alleviated by nitroglycerin; none of the patients had congestive heart failure or valvular heart disease. Patients with syphilitic or rheumatic heart disease were excluded from the series. Twenty-seven patients in all were treated; 3 died in the course of treatment. Of the 27 patients there were 21 males and 6 females

whose ages varied from 38 to 69 years, averaging 57 years. Five had been ill for 1 year or less, 11 for 2 to 3 years, and 11 for 4 years or more. Six of the patients (22%) previously had had acute myocardial infarction.

The patients were treated as outpatients and were given two intravenous injections weekly. The patients were supplied with a card which they always carried with them to record daily the number and severity of attacks and the amount of nitroglycerin used. In order to form an estimate of the patients' ability to cooperate and the frequency of the attacks (in addition to what could be gathered from the case history at the first consultation), and also to determine whether the institution of treatment exerted any psychologic influence, they were given injections of a placebo (a pale, brownish sugar solution of the same appearance as heparin) during the first 2 to 4 weeks. Following this period 100 mg. of heparin was given in each injection for a period varying from 7 to 11 weeks. The treatment was concluded by injections of the placebo for 3 weeks in order to determine whether the possible results of the treatment might be changed again.

Before treatment was instituted an x-ray was taken of the heart and lungs. An electrocardiogram and ophthalmoscopic examination were obtained immediately before and at the end of the intervening period during which heparin was administered. The patient's blood pressure was measured at each visit. The hemoglobin percentage and the weight were controlled in order to exclude any effects of anemia and fluctuations of the weight. Finally, the patients were safeguarded against changes in daily routine, work, diet, and consumption of medicine (in addition to nitroglycerin) which might give rise to erroneous estimates of the efficacy of the treatment.

In addition to angina pectoris 5 patients complained of intermittent claudication. This symptom, too, was closely followed during the heparin treatment, and oscillometry was performed before and toward the end of the heparin period.

Few side effects of the heparin treatment were observed. In 1 case there was troublesome bleeding from the incision of the ear after hemoglobin determination; hemorrhages from the site of injection were observed in a few cases. One woman, aged 54, had slight vaginal bleeding for 12 hours following each heparin injection.

Fifteen of twenty-seven patients stated that they improved during the period of treatment; 9 of these improved during the first period of placebo injections whereas only 6 reported improvement during treatment with heparin.

Typical objective changes in the electrocardiogram, blood pressure, or ophthalmoscopic findings which might suggest a beneficial effect of heparin could not be demonstrated.

Three patients died of acute myocardial infarction during the treatment with heparin. One patient developed myocardial infarction 2 weeks after the end of the last placebo period.



Only 1 of the 5 patients with intermittent claudication improved during treatment with heparin; no improvement could be demonstrated in the oscillometric indices.

The authors consider it improbable that treatment of angina pectoris with heparin in the recommended doses is beneficial. (Am. J. Med., Apr. 1953, A. Grüner, T. Hilden, F. Raaschou, and H. Vogelius, Copenhagen, Denmark)

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### Dispensary Medicine

The following information abstracted from a personal letter indicates the scope of Dispensary Medicine and the things that can be accomplished when personnel are interested, active, and alert to all possibilities.

"The freer use of the medical books. The books were moved to a lounge room, old texts replaced by newer editions; new books obtained, and one of the junior medical officers appointed as librarian. The results have been excellent, no books lost, and they have been freely used."

"Compatible with the work load and demands of the Dispensary each junior medical officer attended clinics in the nearby city. This was done according to a schedule suitably worked out. A clinico-pathological clinic was the one most regularly attended. The clinic results were brought back to the Dispensary and a few days later the staff discussed the protocols along the same lines as the clinic. This resulted in study, reading, and thinking to arrive at the correct diagnosis. This procedure also allowed the senior medical officer an opportunity to judge the professional training and competence of each medical officer."

"Once each week, usually Thursday, another meeting of the medical officers was held in which administrative matters were discussed and then one medical officer presented a medical subject of his own choosing. Schedules were made up well in advance to allow time for adequate preparation."

"Due to reduction in complement of hospital corpsmen it became difficult to carry out the required training sessions during the day. Therefore schedules for training sessions of the watch each evening, Monday through Friday, were inaugurated with the Chief of the Watch or the Medical Watch Officer acting as instructors. These sessions were considered important for morale and public relations as well as training."

"Sight screening is done as a part of each preemployment examination. An audiometric record is made of each employee going into a noisy ship."

"A permanent log is kept of all handicapped persons employed. Pre-employment records have been moved to medical records. Clinical records changed to alphabetical filing and are made readily accessible to the clerks and medical officers handling the patients."

"The Industrial Hygienist has been made a coordinator of the industrial health activities. One clerk was provided and the following records are kept current: (a) x-ray report card on each employee, (b) a file of all personnel engaged in hazardous occupations requiring periodic examinations as well as other personnel requiring special examinations such as submarine personnel, radiologic defense personnel, et cetera, (c) the log of the physically handicapped, (d) a file of personnel with known medical conditions such as diabetes, heart disease, hypertension, et cetera, (e) monthly industrial health report and data for preparation, and (f) statistical data from the fiscal department."

"Sanitary inspections of the yard in accordance with a plan suggested by the Inspector General, with a written report each week to the responsible heads of the inspected activity and each month a summarizing report of any major discrepancies to the Shipyard Commander."

"The daily work load in the last quarter of 1952 has increased considerably as compared with the last quarter of 1950. On the industrial health side the civilian population of the yard has increased 55.3%, the number of dispensary treatments 100.4%, referrals to private physicians 83.9%, number of x-rays taken 13.8%, Industrial Hygiene surveys and analyses 551.8%, and the optometric screenings and refractions 131.6%. To handle the increased work load there are 7 medical officers and 26 corpsmen as compared to 10 medical officers and 34 corpsmen in 1950."

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#### Perinephric Abscess

The accumulation of pus in the perinephrium often produces such a wide assortment of signs and symptoms that errors in diagnosis are all too common. Foulds aptly phrased the problem by stating, "There are few diseases which provide the urologist with more difficulty in diagnosis, and in which the precise methods of urological examination yield so little assistance as does perinephric abscess." The consequence of failure to recognize the lesion may very likely result in a fatality, so that the internist and the surgeon as well as the urologist should acquaint himself with the capricious nature of perinephric suppuration. The internist may be misled by assuming that pneumonia, pleurisy, or empyema accounts for the illness. The surgeon may be baffled by the obscure symptoms and misdiagnose perinephric abscess as subphrenic abscess, gallbladder disease, carcinoma of the colon, splenic abscess, caries of the spine, or some other intraperitoneal disorder. The pitfalls in diagnosis account for the often late urologic consultation, and frequently the patient has become dangerously debilitated. To err in diagnosis and treatment at such a time imposes grave consequences, and the judgment of the urologist is severely tested.



The history of complaints may be multiple, prominent, or mild, and are notorious for their inconsistency. The onset may be rapid or unbelievably slow. Nevertheless, a detailed history may be the most important aid in diagnosis, for a clue to some pre-existing, and perhaps now healed, abscess may be brought to light by careful interrogation. Not infrequently the patient is too ill to respond to any questions, and the examiner must make the diagnosis with only objective findings. Pain is the most common complaint and is frequently the first symptom. A constant dull ache in the costovertebral angle is typical. The pain, however, may be localized exclusively to the abdomen or thigh, or be in combination with loin discomfort. It may be accentuated by hyperextension of the thigh because of the regional splinting of the lumbar muscles. The patient may object to contraction of the muscles on the affected side and thus, while standing erect, will bend easily toward the involved loin, but is unable to bend laterally toward the uninvolvement side. On rare occasions the patient has no pain and even forceful percussion of the costovertebral angle causes no reaction.

Fever occurs in practically all patients having perinephric abscess. This may range from 90° F. to 100° F. or higher and is usually erratic and of the septic type.

The other signs and symptoms account for diagnostic difficulties for they often misdirect attention by their character and severity. Abdominal distention, vomiting, cough, hiccough, dyspnea, constipation, or diarrhea may incriminate the appendix, colon, pleura, or lungs. Profound malaise and weight loss, chills and sweat may be prominent features. There is usually a paucity of complaints referred to the urinary system, for frequency, dysuria and hematuria are not present unless the kidney is primarily involved with an inflammatory lesion capable of causing cystitis. The symptoms may be summarized as follows, but it must be emphasized that perinephric abscess can occur without any of the following complaints: (1) pain in the loin, which may radiate to the abdomen or thigh; (2) accentuation of the pain with hyperextension of the corresponding thigh; (3) aggravation or production of pain by lateral movement of the trunk toward the opposite side; (4) vomiting; (5) cough, hiccough, and dyspnea; (6) constipation and diarrhea; (7) weight loss; (8) chills and fever; and (9) frequency of urination, dysuria, and hematuria.

The availability of antibiotics and sulfonamides does not alter the requirements for incision and drainage of the abscess as soon as the diagnosis is established. Antibiotics have been found to deter rather than to hasten the recognition of perirenal suppuration, for the course of the disease is probably modified by these agents, thereby masking the signs and symptoms and postponing the diagnosis. The incidence of metastatic perinephric abscess has doubtless been greatly reduced by the general utilization of antibiotics in the treatment of the primary infections. (Am. J. Surg., Apr. 1953, R. S. Hotchkiss)

### Subphrenic Abscess.

Abscess in the subphrenic region is an important and serious surgical infection. Fortunately the condition is relatively uncommon. Although subphrenic infections share many of the properties common to surgical infections in general, they also possess facets of special interest to the surgeon. The unique location of the subphrenic region serves to complicate the surgical approach. The proximity of the abscess to the pleural cavity and the liver makes for additional hazards. The wide variety of primary diseases in various parts of the body responsible for the initiation of subphrenic infections accounts for a complex pathogenesis. Problems in diagnosis of subphrenic abscess are sometimes greatly magnified by a paucity of clinical findings. The technical problems involved in establishing effective surgical drainage of the abscess add to the trials of the treatment of the condition. The primary disease frequently persists, and complications of the subphrenic abscess often develop.

Subphrenic infections arise from sources in many parts of the body but the great majority follow intra-abdominal disease and operations. Delay in diagnosis may often result from failure to suspect the possibility of the presence of such an infection. The average duration of infection until treatment in several reported series was: 26 days, 11.6 weeks, 12 weeks, 4 months, and 4.5 months.

Surgical drainage is indicated when suppuration occurs in the subphrenic region. The operation of choice for abscesses which can be reached by the posterior route is the retroperitoneal approach described by Nather in 1922, and by Nather and Ochsner in 1923. The extraserous abdominal route of Clairmont and Meyer is the procedure of choice for draining abscesses which may be reached via the anterior route.

Complications of subphrenic abscesses play a prominent role in the morbidity and mortality of this disease. The great majority of complications are intrathoracic. Thoracic complications have been reported in 76% of 59 cases, 74% of 31 cases, and 61% of 111 cases.

The subphrenic abscess developed as a complication of a surgical procedure in 74 of the 154 cases studied, operations on the biliary tract and stomach accounting for 56 of these. In the 80 remaining cases the subphrenic abscess was not a complication of a surgical procedure; appendicitis and rupture of a duodenal ulcer being the cause of the abscess in 44 of this group.

Death occurred in 35 cases. There was, however, reduction in death rate over the 20-year period as evidenced by the fact that the rate for the early years covered by the study was almost 2-1/2 times as great as the rate for the more recent years. The mortality rates were similar for abscesses on the right and left sides. (Surg., Gynec. & Obst., Apr. 1953, J. J. Berens, H. K. Gray, and M. B. Dockerty)

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### Intra-aortic Blood Transfusion

Risks and difficulties act as deterrents and cause intravenous transfusions to be made when the arterial route would be more effective. There is, therefore, need for a method which is free from complications. Such is intra-aortic transfusion which has now been in use for more than 18 months.

The patient lies either fully on the right side, or midway between this and supine, supported by sandbags under the pelvis and left scapula. A skin wheal is raised with 2% procaine at a point opposite the third lumbar vertebra (just above the level of the umbilicus) and in the line through the tip of the eleventh rib and the highest point of the iliac crest.

A track down to the front of the vertebral body is infiltrated with 2% procaine through a 12-cm. needle, and the skin nicked with a fine knife. A special stepped needle, with a stem 14.5 cm. long and 2.8 mm. in diameter terminating in a section 1 cm. long and 1.5 mm. in diameter, is inserted along this track. The step on the needle is made fairly abrupt so as to prevent the passage of the thicker section into the aorta, and this arrangement necessitates a moderate amount of pressure to get the needle through the lumbar fascia. The needle is manipulated until its point slides onto the anterior surface of the vertebra. There a resistance is felt when the point encounters the aorta, and insertion for a further 1 cm. results in a pulsating flow of blood.

The needle is then connected to a transfusion apparatus, which may consist simply of the standard equipment found in hospitals, with the addition of a pressure bulb and air reservoir. It is advisable to use a modified filter and to reverse the attachments to the glass tubes which enter the bottle, so that it may be used in the upright instead of inverted position. A more elaborate apparatus can easily be made up from ordinary transfusion sets, with the addition of a Y-tube, a 3-way tap, and sphygmomanometer. With this, blood or saline solution can be run in at will, and continuity in the administration of blood is more easily maintained. Furthermore, readings of the intra-aortic blood pressure, and also of the pressure at which blood is delivered to the needle, can be made.

If the manometer pressure is kept 200 mm. Hg above the mean aortic pressure, a pint of blood can be delivered in 3 minutes. In most cases a rate of about 1 pint in 5 minutes was used, and 2 pints was the largest quantity required to restore the blood pressure to normal and to give a pulse of good quality. The blood flow through the drip chamber usually has a pulsatile character which confirms that the needle is in the aorta. If there is any doubt, the needle can be momentarily disconnected and the retrograde flow inspected.

At the completion of the transfusion the needle is withdrawn about 1 cm. to allow the blood which escapes from the puncture in the aorta to leave the body instead of forming a hematoma. When the flow ceases, as it does in a minute or less, the needle is withdrawn.

In children and infants, smaller and shorter needles without the step are used.

In all, 20 patients, ranging in age from 2 days to 84 years, have been transfused by the intra-aortic route, and in 3 of these the transfusion has been repeated. Owing to the serious nature of the illness, there have been some fatalities; but in only 1 case did the transfusion appear to have a deleterious effect.

No pain in the back was experienced, apart from the transient discomfort during the insertion of the needle and slight backache for a few days in a few patients. The most common complaint was a tingling in the legs and feet, which passed off as soon as the transfusion ended. This was at first attributed to the use of cold blood, producing vasospasm either in the lower limbs or spinal cord; and, indeed, the first case showed much pallor of the skin of the thighs and buttocks, followed by hyperemia when the transfusion ended. But the symptoms are felt even when the blood is warmed before infusion. A colleague, Dr. M.D. Milne, called attention to the paresthesia experienced with high concentrations of citrate in the blood, and it seems very probable that while infusion is in progress the blood in the lower limbs will contain enough citrate to produce tingling.

The aorta has many advantages over the peripheral arteries as a site for transfusion. It is constant in position and is relatively fixed by the lumbar arteries. It contains little muscle tissue and so cannot go into spasm, and its width and the rapidity of its blood flow are sufficient to preclude any chance of obstructive thrombosis resulting. The aorta can usually be entered in a few seconds, and its depth from the surface and the elasticity of its walls prevent the needle from shifting once it is in position. It has been argued that in older patients atheromatous plaques might impede the passage of the needle or be detached and become emboli. Experiment has shown, however, that the relatively fine point used will pass quite easily through the ordinary atheromatous plaque without causing any detachment.

The vertebral level at which the needle is introduced is important. Above the third lumbar vertebra there is a danger of damage to the left kidney, and below it the aorta bifurcates and could be missed. The possibility of puncture of the descending colon by a needle inserted too far anteriorly must also be borne in mind.

As has been pointed out (Haxton 1952) the aorta is directly accessible when the thorax or abdomen is open, and transfusion into it can be made easily and quickly should the need arise during operation. (Lancet, Mar. 28, 1953, H. A. Haxton, Manchester, England)

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The printing of this publication has been approved by the Director of the Bureau of the Budget, June 23, 1952.



### Elective Induction of Labor

One of the important changes in attitude in obstetric practice is that concerning the elective induction of labor at term in normally pregnant women. The alleged increase in intrauterine fetal death and difficult labors in pregnancies which go past term is said to be prevented by this procedure which is rapidly becoming a commonplace method for managing pregnancy. In addition it is stated that the mother is freed from the concern as to when the baby will be born and whether or not she will arrive at the hospital in time for delivery.

Because the recorded series include the personal experience of skillful individual obstetricians or of well-controlled hospital groups, they do not represent the over-all outcome of elective inductions, many of which are performed without regard to all the details so important in reducing the danger. Any procedure which entails vaginal manipulation, rupture of the membranes, and the administration of pituitary extract, no matter how carefully it is carried out, increases the risk to the mother or the infant. Because it is as true now as it always has been that interference in normal pregnancy is rarely justifiable, unnecessary procedures should be eliminated.

It is recognized that in recent years the increased emphasis on prenatal care and other aspects of obstetric practice has increased the demand on the physician's time, elective induction of labor will not solve the problem. For the obstetrician with a relatively small practice, routine induction is unnecessary because it is unusual that all professional commitments cannot be met. The physician who delivers more than 300 women a year, particularly if he also carries on a large office and gynecologic practice and works in a hospital inadequately supplied with residents, has difficulty in discharging his responsibilities to the patients under the best of circumstances, and induction, while it may relieve the problem somewhat, does not do so completely. An association with another obstetrician or a group will benefit both physician and patient, the former by the provision of time for study and leisure and the latter by the assurance that one of her own doctors will always be available either in the office or when she enters the hospital. Under such arrangements inductions for convenience are never necessary and the opportunities to supervise the patients more closely should improve the over-all results. The family physician may find it difficult to carry on an obstetric practice in conjunction with the rest of his work and as a result often resorts to unnecessary induction of labor. Because in many instances he has had little training in obstetric operative procedures and may not take time or know how to evaluate the patient for induction, the result may be disastrous. It is the responsibility of the obstetric staff of each hospital to set up and enforce rules concerning the induction of labor which should include not only the permissible reasons for the procedure but by whom and how it is to be done. A requirement for consultation with a qualified obstetric specialist

who must evaluate the patient and record his findings, his decision, and the reason for the induction before it can be carried out should reduce the total incidence and particularly the number of inductions in cases in which contraindications are present.

There is no question but that the induction of labor can be done with relative safety on properly selected patients by properly qualified physicians but regardless of who performs the procedure an unavoidable risk is added for the mother and her infant. This risk is increased many times if all possible precautions are not taken. Because there is no proof that either fetal or maternal mortality is improved by induction of labor in normal pregnancy at term there is no justification for its use. (Am. J. Obst. & Gynec., Apr. 1953, J. R. Willson)

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#### Recovery and In Vivo Survival of Human Red Cells

The author's interest in studying red blood cell preservation was originally stimulated by the work of Luyet, who presented evidence that intracellular crystallization of water is perhaps the most damaging of all subzero temperature effects on living cells. On repeating this work, the authors also succeeded in preventing the hemolysis of red cells caused by ordinary freezing and in maintaining other tissues in a viable state for a long period by high velocity cooling and subzero storage in the vitreous (noncrystalline) state. Their studies confirmed Luyet's observations that preservation of viability at low temperatures is greatly facilitated if cells are first partially dehydrated and at least a portion of the intracellular water replaced by one of the lower polyhydric alcohols capable of moderate to rapid penetration of the cells. While these studies were in progress, Smith presented further evidence for the beneficial effects of the polyhydric alcohols by reporting that whole blood in the presence of glycerin could be stored at  $-79^{\circ}\text{C}$ . for periods up to 3 months without excessive hemolysis on thawing. Since then, Sloviter, and Mollison and Sloviter have extended Smith's observations. They showed that human red cells equilibrated with glycerin could be cooled to  $-70^{\circ}\text{C}$ . for 2 hours, and in spite of considerable loss by hemolysis during processing, the remaining cells survived normally up to 60 days after transfusion.

More recently, and since the completion of the authors' investigations, Mollison, Sloviter, and Chaplin have reported post-transfusion survival studies of human red cells which have been stored at subzero temperatures up to 8-1/2 months.

A preliminary summary of the authors' studies, still in progress, which have been conducted during the past 2 years on both quantitative recovery and in vivo survival of human red cells that were stored at subzero



temperatures up to 6-1/4 months prior to transfusion is presented. Further studies of processing methods and equipment along with in vivo survival studies of human red cells preserved and transfused after subzero storage up to 1 year are in progress, to be reported later.

Seven lots of red cells stored in glycerin solutions at  $-70^{\circ}\text{C}$ . up to 6-1/4 months and 1 lot of red cells stored at  $-15^{\circ}\text{C}$ . for 50 days were studied as to quantitative recovery after rewarming and removal of glycerin and quantitative in vivo survival after transfusion.

Over 90% of red cells were recovered after subzero storage at  $-70^{\circ}\text{C}$ ., and approximately 64% of these cells survived normally after transfusion. Of 1 lot of red cells stored in glycerin at  $-15^{\circ}\text{C}$ ., 79% were recovered intact, and 47% of these recovered cells survived normally after transfusion. No immediate or delayed reactions were encountered when these stored cells were transfused.

There was evidence from these experiments that a large portion of the abnormal post-transfusion loss of stored cells was due to the incomplete removal of glycerin from some of the cells before transfusion. Other possible methods for the more efficient removal of glycerin have been discussed.

These studies, with those recently reported by British workers, would indicate that the use of glycerin and subzero temperatures may eventually solve the long-studied problem of the prolonged preservation of red blood cells for transfusion purposes. (Arch. Surg., Mar. 1953, I. W. Brown, Jr. and H. F. Hardin)

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#### Subtotal Gastric Resection

This study is based on 154 cases of subtotal gastrectomy performed for lesions other than carcinoma at the U. S. Naval Hospital, Philadelphia, Pa., between January 1946 and June 1950. Of the 154 cases studied, 6 died as a result of operation and 45 were unavailable for follow-up, leaving a total of 103 survivors on whom sufficient information was obtainable to be included in statistical analysis. The information reported was obtained by personal interviews. The average patient age in this group was 48, the youngest was 20, and the oldest was 72. The patients were all male war veterans.

The pathologic conditions for which operation was performed in the 109 followed cases included 72 duodenal ulcers, 30 benign gastric ulcers, 6 gastroenterostomy stomal ulcers (1 of which was a gastrojejunal fistula), and 1 case with both benign gastric and duodenal ulcers.

Any case of gastric ulcer which did not heal completely under a 1-month strict medical regimen was considered a candidate for gastric resection. All gastroenterostomy stomal ulcers were considered surgical problems and were subjected to resection.

In chronic duodenal ulcer patients, the following factors were considered to be indications for resection: (1) obstruction, (2) repeated or massive hemorrhage, (3) past perforation with continuing symptoms under adequate medical management, and (4) continued and progressive pain under a reasonable period of adequate medical management. "Adequate" medical management and "reasonable" periods of time were factors decided upon in conjunction with the medical service and these cases were without exception referred to the authors from that service.

The following conclusions can be drawn from the material at hand: satisfactory results may be obtained in at least 86% of unselected cases subjected to gastric resection, providing indications for operations are carefully considered. Radical subtotal gastrectomy provided protection from ulcer symptoms and complications in all cases of gastric and gastroenterostomy stomal ulcer studied in this series, and in all but 8.3% of duodenal ulcers. Proved postgastrectomy stomal ulceration occurred in 5.5% of duodenal ulcer patients included in this study. A satisfactory percentage of patients subjected to gastric resection can be economically rehabilitated. Failure to gain weight after operation remains a problem in a substantial percentage of cases. Complete achlorhydria is not essential to the achievement of a satisfactory clinical result in all cases, though no cases of recurrence were noted in which this state existed. The dumping syndrome is a factor which must be reckoned with in a consideration of results in a radical gastrectomy, but appears to be easily controlled in most cases, and is not thought to constitute a contraindication to the procedure. A more intensive follow-up of patients with this syndrome in mind would result in a lower incidence of dissatisfied patients. (Ann. Surg., Apr. 1953, CAPT L. G. Bell (MC) USN; LT B. D. Sherer (MC) USN; and LCDR J. J. Keenoy (MC) USNR)

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#### Examination of the Patient With Varicose Veins

There are three necessary steps to the successful treatment of varicose veins of the lower extremity: (1) adequate examination, (2) adequate surgical procedure, and (3) adequate follow-up examination and treatment. Each step must be followed carefully with the end result in mind.

It is the authors' impression that failures in the successful treatment of varicose veins are not so much due to the type of procedure used as to inadequate examination before treatment is started. Only by means of an adequate examination can the surgeon know the exact type of treatment that is best suited for the individual case. The authors do not advocate any one type of procedure for eradication of varicose veins, but believe that the treatment should fit the individual case. Therefore, they use (1) the stripping operation, (2) eradication by blunt and sharp dissection, and (3) injection therapy. In many cases they use a combination of any or all of these types of procedure.



During the examination phase the examiner must bear in mind the following points so that treatment may be carried out adequately. 1. Is this a venous disease? 2. Which system is involved (greater saphenous system, lesser saphenous system, or deep venous system)? 3. What type of surgical procedure must be used—stripping, dissection, or injection? 4. Are there any incompetent perforators present and what is their location?

By the use of the three basic principles of physical examination, namely, inspection, palpation, and percussion, the examiner can arrive at the answers.

The Trendelenburg test is important in three ways: (1) It is proof that the dilated veins are varicosed, diseased veins and need treatment. (2) It locates, together with the palpation test, the site of incompetent perforator veins. (3) It will give positive proof together with the percussion pulse transmission test as to which system is involved.

The surgical procedure varies with the individual case and the type of veins found in that case. Thick-walled, straight veins can easily be stripped; large saccular veins must be dissected; and superficial tortuous thin-walled veins can be injected. No matter which type of therapy is chosen for the eradication of the distal varicosities each must be preceded by adequate ligation. The ligation must be flush with the common femoral vein in the case of the great saphenous varicosities and flush with the popliteal vein in the varicosities of the lesser saphenous system. (Postgraduate Med., Apr. 1953, H. O. McPheeters and C. V. Kusz)

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#### Observations on the Clinical Use of a Chlorophyll Dentifrice

Within the past few years, a number of preparations containing chlorophyll have been offered to the medical and dental professions and to the public. Although the importance of this substance in plant physiology has long been recognized and although some reports of its role in general medicine, surgery, and dentistry are available, final appraisal of its use in clinical dentistry has not yet been made.

There are reports in the literature of the effect of chlorophyll on salivary lactobacillus counts. In the studies which have utilized dentifrices containing chlorophyll, the subjects brushed their teeth in a definite manner at specific times (controlled brushing). Because chlorophyll-containing dentifrices can be purchased without a prescription, it is most likely that persons use such a dentifrice as they use other dentifrices rather than according to a controlled brushing technic. For this reason the effects of "uncontrolled" brushing of the teeth with a chlorophyll-containing dentifrice were studied.

The effect of uncontrolled toothbrushing with a chlorophyll-containing dentifrice on the lactobacillus counts of 20 patients was studied before and after 6 to 9 months' usage of this dentifrice. No effect on the lactobacillus counts was noted.

The effect of uncontrolled brushing with a chlorophyll-containing dentifrice on chronic gingivitis was studied. One hundred and nine patients used the experimental dentifrice, while 137 patients used a dentifrice of their own choice. At the end of 6 to 9 months, no important differences were observed between the two groups with regard to changes in gingival appearance or gingival sensitivity incident to subgingival curettement. While there was some tendency toward decreased gingival bleeding in the chlorophyll dentifrice group compared with the control group, the difference was not statistically significant. (J. Am. Dent. A., Apr. 1953, A.H. Kutscher and N. W. Chilton)

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#### U. S. Navy Occupational Health Program

Public Law 658, 79th Congress became effective in August 1946. The Law states in part "that for the purpose of promoting and maintaining the physical and mental fitness of employees of the Federal Government, the heads of departments and agencies including government-owned and controlled corporations, are authorized, within the limits of appropriations made available therefor, to establish by contract or otherwise, health service programs which will provide health services for employees under their jurisdiction." In the Navy the responsibility for conducting this program was assigned to the Surgeon General. At field activities, the senior medical officer, under the commanding officer, is directly responsible for carrying out the program. He is known as the Industrial Medical Officer and has additional medical officers, nurses, industrial hygienists, psychologists, optometrists, et cetera, as assistants.

Prior to World War II, the Navy was not considered to be a highly industrialized organization but now it has developed into one of the largest employers of industrial manpower in the world. Also each ship is now a floating industrial shop. During the war years the need became evident for a more comprehensive medical care program for employees and for an increase in the development of ways and means to prevent injury and illness to employees. In order to meet this need there was formed within the Preventive Medicine Division of the Bureau a branch to secure and train medical officers in the field of industrial medicine, to acquire industrial hygienists and other required personnel, and to organize and direct a program in all field activities which would insure a health program available to all employees of the Naval Establishment.

This health program now offers:

(a) Pre-employment examinations which entail a knowledge of the applicant's past medical history, the past employment history, the present physical condition, and the knowledge of the work requirements of the job sought.



(b) Pre-placement examinations to determine the physical fitness of an applicant for a particular job. This is actually a continuation of the pre-employment examination but is more detailed and has a specific purpose. The placement of the handicapped individual is included here. Proper job adjustments and selective transfers are a large part of the program.

(c) Periodic medical examinations of employees who are required to perform extra-hazardous duties, such as sand blasters, persons handling lead, radioactive materials, et cetera, also those in jobs which may prove hazardous to others such as the crane operator. Annual chest x-ray of employees is part of this program.

(d) Records. When an individual is employed, a health record jacket is opened in the dispensary. In this jacket is filed the record of the pre-employment examination, the record of annual chest x-rays, the record of all periodic examinations, the record of all visits to the dispensary, whether for industrial or nonindustrial conditions, a record of all special examinations, and all correspondence relating to the employee's health. Over the years this health record becomes valuable not only for the protection of the employee in detecting disease tendency but also for disposition of disability claims. The records are confidential and cannot be used without the employee's consent except in a very few instances.

(e) Sick leave. Many employees believe that sick leave is a "right" rather than a privilege and this belief can be corrected only by education. In the health jacket a chronological record is kept of sick leave and frequent sick leaves are soon brought to the attention of the medical officer. If the employee is suffering from some recurrent condition or from a chronic disease, medical advice can be of assistance in the correction of the condition. The abuse of sick leave and the detection of actual fraud in the use of sick leave can then be determined.

(f) Care of the injured employee. The program can be of great assistance to management in the judicious handling of any injury incurred, by making every effort to give adequate and sympathetic treatment, by returning the individual to work as soon as possible, and aid in the elimination of hazardous and unsafe practices. The care usually given at the dispensary is first aid only and when and if necessary the individual is transferred to a Federal hospital for definitive care. Hospital cases are kept at a minimum because each hospital case becomes a lost-time accident charged against the activity.

(g) Eye protective-corrective program. This program aims at the elimination of all eye injuries by requiring all personnel to wear eye protection whenever and wherever necessary.

(h) The treatment of nonoccupational, on-the-job illness. This program is embodied in Public Law 658 and has as its aim the reduction of "leave time" for minor illnesses. The extent of treatment provided in this program is generally limited to such treatment as will enable the employee to continue at work. Each case must be decided on its own merits. Assistance is given to the employee's private physician so that the employee can remain or return

to his work sooner than otherwise. In general this program is a good morale factor and actually saves the government money. In civilian industry, this program has reduced absenteeism and it has been stated that the total overall saving amounts to the adding of 1,000,000 persons annually to the labor force.

(i) Health counseling in job adjustment, personal relations with fellow employees, and supervisors, and often personal problems is an important part of the program.

(j) The industrial hygiene program as represented by the industrial hygienist is the guardian of the atmosphere, the materials, and the methods in which and with which every employee works. The industrial hygiene program demonstrates management's interest in the health and welfare of the employees.

The commanding officer of any naval activity as head of the management team should be conversant with the broad scope of the program. He should consider the industrial medical officer and the industrial hygienist as part of his advisory team in matters of production. (The man who sits in the "big chair" sets the example and sparks the program. Without the active wholehearted support of the commanding officer an industrial health program will be of small value. — Editor) The medical officer's responsibility is to keep the human portion of the activity in top running condition. He should lend every support possible to an active safety program.

The combination of an effective occupational health and safety program will result in the prevention of the loss of manpower and the prevention of human suffering. As a matter of fact nearly 100% of all accidents are preventable. (Lecture by CAPT A. G. Churchill (MC) USN))

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#### Selected Abstracts From Field Reports

"The medical service of a Marine Division as currently organized proved itself extremely flexible and with few exceptions, adequate to engage in the operations. The difficulties experienced were due to two main factors: (1) lack of sufficient ambulances of the proper type and (2) lack of training of Medical Officers and Hospital Corpsmen."

"It is recommended that an LST or similar vessel be specially equipped and staffed and assigned the primary mission of serving as auxiliary hospital ships in close support of the amphibious assault. A feature of value in this type of ship is that the decks can be well utilized as a landing area for helicopters."

"It was noted, that, almost without exception, units arrived without insect control supplies such as insect repellent, louse powder, DDT of any variety, and dispensing equipment. Jungle kits were either lacking entirely or were incomplete. There were far too few immersion-type water heaters and it was with difficulty that some semblance of proper operation of these was obtained."



"The importance of good first aid cannot be over-emphasized. It is invariably beneficial to the patient, frequently lessens the complication of injury, and occasionally saves lives. In many instances lack of knowledge of accepted principles and methods was evident. It is apparent that some medical officers consider first aid 'beneath them' and that corpsmen have been inadequately trained. Hours of instruction and drill are required to train a good 'first aid man.' Even then occasional refresher exercises are necessary to retain competence."

"The varying and frequent demands of various forward units for additional ambulance support from the Medical Battalion ambulance pool can become a harrowing and exasperating experience for those responsible for over-all evacuation. If a careful and continual check on the location, deployment, and use of these vehicles is not made, drivers with their vehicles will stray from parent organizations, 'adopt' forward units, or be 'appropriated' by them. The Division Surgeon in cooperation with the Commanding Officer of the Medical Battalion should make every effort insofar as practicable to keep control of these vehicles in order that they can be available for prompt deployment when they are needed."

"It is recommended that Gel-foam supplant the present supply of Fibrin foam on the Table of Medical Supplies. It is felt that Gel-foam proved its worth in the repair of liver lacerations and in checking other types of hemorrhage and was far superior to Fibrin foam in this regard."

"A helicopter landing-site should be well marked in an oiled-down or grassy spot within one hundred yards of the receiving ward. This site should be open on three sides and at least seventy feet square."

"Practicable improvisation or attachments to the litters should be provided to allow patients with respiratory embarrassment to be placed quickly into high Fowler's position. Suggested specifications for this litter attachment should include:

- a. Inverted 'V' shaped hinged steel rod construction. Use two inverted 'V's', held rigidly parallel, with canvas for back.
- b. Attach to litter pole with 'C' clamp that rotates.
- c. Height sufficient to permit a head rest."

"It is recommended that no attempt to complete 'F' cards and 'H'-8 forms be made in the field. The large number of forms required by the tremendous patient load could not have been handled by four times the available help and equipment without an impracticable delay in evacuation. An emergency medical tag properly filled out is considered enough medical history and record for patients at this echelon level. Many tags are made out hurriedly and under extreme stress. These may be more or less worthless, but there is usually enough time in a clearing station to complete or remake these tags."

"All field officers should be familiar with orders concerning care of the dead. During action men of the collecting stations should not be delegated the duty of transportation and/or burial of the dead."

"The separation of a unit any size into small groups and the loading of these groups on different vessels for transportation to the zone of operations interferes considerably with the efficient functioning of the unit. This is particularly the case when no period has been provided prior to embarkation for the development of a firm organization and the indoctrination of personnel with no knowledge of or experience with Marine Corps medical activities."

"A similar situation existed as regards loading of supplies. These were not only loaded on several vessels but loading schedules and personnel embarkation schedules were not correlated so that it was exceedingly difficult if not impossible to retain responsible experienced personnel ashore to maintain contact with supplies and accurately establish their location when loaded."

"It has been the policy to establish the Regimental Aid Station within the Headquarters and Service Company perimeter of defense. Aid Station personnel are instructed to dig in as soon as possible and to take advantage of available cover."

"All organic units reflected the benefits of experience in the previous operations and performed with efficiency. Faced with unusual problems and in many instances operating under adverse conditions they executed their missions with diligence and resourcefulness."

"The Battalion organization as now constituted proved most effective. Designed for amphibious type of warfare its flexibility proved invaluable in meeting the demands of the operation. Companies are capable of operating independently or jointly. A Clearing platoon can operate as such or by combining with a second platoon is capable of establishing a hospital facility. Increments of personnel and equipment can be shifted from one group to another to augment capabilities. Headquarters and Service Company is prepared to furnish and manage logistic support where it is needed."

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#### Fields of Interest in Medical Research at Aeronautical Medical Equipment Laboratory

In the design and development of personal equipment for naval aviators and aircrewmembers the cooperation of scientists in several fields is required. Transporting man to an environment for which nature has not prepared him and enabling him to function efficiently in that environment demands, first, that he be safely gotten there; second, that his physiologic limitations and capabilities for travel, existence, and operation in this environment be borne in mind; and third, that means of escape in the event of such necessity be provided.

Even in the short history of AMEL, practically every major phase of physiology has produced criteria for development of equipment. The physiologic parameters available are applied by the laboratory in designing equip-



ment. When new or additional data is required, the laboratory undertakes the indicated research and then applies the results.

The knowledge presently available is insufficient to meet the needs of AMEL in such broad fields of human physiology as respiration, explosive decompression, body heat exchange, water balance, body impact effects, effects produced by the sonic and ultrasonic vibrations of jet engines, and performance criteria. Projects at the laboratory call for the development and evaluation of personal equipment, the design of which involves all of the above fields. As an example, pressure garments and oxygen equipment design impose a continuing need for investigations in explosive decompression, oxygen supply systems, ventilating garments, and thermal conditioning under flight conditions.

Of primary concern at AMEL are visual needs for day and night flying, for special recognition and legibility of visual displays, and for search and rescue detection. Emphasis in this work is primarily upon application of psycho-physical methods of approach to the problems and evaluation of the practical considerations. The bio-mechanics of crashlike impulses also occupy a large proportion of the laboratory space, equipment, and personnel. Considerable research is necessary to understand the principles which should be applied in the development of crash-protective equipment and ejectable seats. The development of objective measures of human performance, which might be applied under field conditions, occupies an important exploratory place in the program of the laboratory. Efforts are being made to adapt techniques of bioelectric potential measurements to performance under stress.

It is significant that the laboratory is continually assigned new projects and that this means that the research requirements must continually vary, including an increasing variety of phases of physiologic research. (ONR)

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#### Mass Immunization of Dogs Against Rabies

In St. Louis, Mo., after a rabies-free year in 1949, single cases of canine rabies were reported in January and July of 1950. In the latter half of November of the same year 3 more cases were reported; the following month, December 1950, saw 6 more cases. Because of this sudden increase in rabies, the mayor of St. Louis, upon the advice of the health commissioner, issued a quarantine proclamation on Dec. 15, 1950, requiring every dog to be restrained by a leash when on the public streets.

With the rapid increase in number and distribution of cases of canine rabies, the health commissioner conferred with the local veterinarians and called upon the state for assistance. A public health veterinarian, on loan to the Missouri Division of Health from the Public Health Service, was assigned to make an investigation. On May 17, 1951, acting upon the veterinarian's report and the recommendation of the health commissioner the mayor issued

a quarantine order based upon a state law which enabled the city to require every dog in St. Louis to be immunized against rabies and confined to the owner's premises.

Immediate steps were taken to organize the rabies inoculation campaign. Eighteen clinic locations were selected throughout the city and a veterinarian from the Health Division was assigned as veterinary supervisor of clinics. The clinics were staffed by local veterinarians from the Greater St. Louis Veterinary Medical Association and assisted by Health Division personnel and by volunteers from various civic organizations. These clinics opened on May 23 and they were operated simultaneously from 4:00 to 8:00 p. m. for 7 days through June 1.

Supplementing the immunization program, an accelerated stray-dog program was activated at the close of the antirabies vaccination clinics. For 2 weeks, 4 trucks were on the streets on a 16-hour a day schedule. This was gradually reduced to the normal 1 truck, 8-hour schedule, by Sept. 1, 1951. All unleashed dogs off the owner's premises were picked up and impounded. Dogs unclaimed after 72 hours were destroyed. Redeemed dogs without proof of vaccination were required to be inoculated before leaving the pound. All dogs at the pound were under daily veterinary supervision during the period June 1 to Sept. 1.

The results of this mass immunization program were sudden and dramatic as shown by the fact that in August, just 2 months after the closing of the clinics, only 1 rabid dog was reported as contrasted with 79 in May. Eighteen rabid dogs were diagnosed by the laboratory for the July-December period of 1951 as compared with 309 for the first 6 months of the year. The incidence has remained low in 1952, and as of July 1, 1952, the total number of rabid dogs for the 12 months following the closing of the clinics was 35. For the first 9 months of 1952, the total number of cases of canine rabies was 22.

The 1951 epizootic was the first in which the large-scale vaccination of dogs was tried and, significantly, was the first rabies epizootic to end abruptly. The entire course of the 1951 epizootic, from the original case to virtual eradication of the disease, was a matter of 9 months as contrasted with previous epizootics which lasted several years. (Am. J. Pub. Health, Apr. 1953, L. E. Fredrickson, J. C. Willett, J. E. Smith, and E. R. Price)

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#### Change of Address

Please forward requests for change of address for the News Letter to: Commanding Officer, U. S. Navy Medical School, National Naval Medical Center, Bethesda 14, Maryland, giving full name, rank, corps, and old and new addresses.



### Fibrosarcoma of the Adult Kidney

In 1948, Culp and Hartman published an excellent article dealing with adult renal tumors. In their review of the literature, they found that adult type embryonal tumor of the renal cortex had been reported with more than 50 different pathologic diagnoses. Obviously, the resulting confusion makes one skeptical of the accuracy of diagnosis in some of the previously reported cases of fibrosarcomas of the kidney. Despite the many attempts in recent years to classify renal tumors, there is still no universally accepted nomenclature in their classification. In general, renal sarcomas have been subdivided by their microscopic picture into fibrosarcoma, myosarcoma, liposarcoma, osteoblastic sarcoma, and undifferentiated.

Mintz reviewed the literature in 1937 and was able to find only 93 well authenticated cases of renal sarcoma. This group was made up of cases reported between 1910 and 1937 and excluded any patient under 21 years of age. Of the 93 cases which he studied, only 15 were fibrosarcoma. A further example of the infrequency of this tumor is the fact that Judd and Donald in reporting on a series of 570 operations at the Mayo Clinic for renal neoplasms found only 6 fibrosarcomas.

Moore reported a case of renal fibrosarcoma in 1951. After reviewing the literature he concluded that this was the one hundred and third reported. The writer was able to find only approximately 60 such case reports. However, only those cases reported since 1910 and 1 case reported by the author have been included in this report.

Renal sarcoma, although rare in the adult kidney, must be considered in the differential diagnosis of retroperitoneal tumors. There are no clinical features which are diagnostic. A large percentage of previously reported cases have had colicky pain with or without hematuria. Eighty percent have the physical findings of a palpable mass. The author's case was unusual in that it was completely asymptomatic. Of the previous case reports reviewed, only 1 was asymptomatic. This one was reported by McNamara, Smith, and Gore and was discovered when the patient was operated for tumor of the cord. The cord lesion was found to be of metastatic nature from a renal fibrosarcoma.

The point of origin is controversial. In some cases, the tumor is thought to arise from the renal capsule. In others, it apparently originates from the connective tissue of the kidney parenchyma as suggested by Weisel, Dockerty, and Priestley. Treatment of this tumor, as with most neoplasms, consists of early discovery and radical removal. Postoperative radiation is of doubtful value.

Prognosis, despite treatment, is always poor. The author is cautiously hopeful for his case because there was no evidence of extension through the capsule and microscopically it was of low grade malignancy. These tumors apparently infiltrate before distant metastases occur. There is, however,

the ever-present danger of implants and venous thrombi at the time of surgery. Of the 15 cases reported by Mintz, only 1 was living 6 years and 3 months after surgery. Weisel, Dockerty, and Priestley give a slightly more favorable report on their series, 1 case being alive 11 years later. They conclude that 10% of the patients operated upon survive 5 years. (J. Urol., Apr. 1953, T.E. Ruff)

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#### Hotel Menus on a Navy Budget

How may a menu with a choice of 6 or 7 different meats be served on a budget of \$1.20 a day? That problem has been solved by the Food Service Division of the United States Naval Hospital at Yokosuka, Japan.

A typical daily menu is as follows:

- Minestrone soup
- Grilled ham slices
- Maryland-styled chicken
- Pot roast of beef
- Batter-fried Vienna sausage with Spanish sauce
- Breaded veal cutlets with tomato sauce
- Italian spaghetti with Parmesan cheese
- Franconia potatoes or steamed rice
- Beets in orange sauce
- Fresh frozen buttered mixed vegetables
- Chef's salad
- Peach pie
- Bread and butter
- Coffee and milk

This is a daily occurrence; this same service is available to the bed patients of the hospital. A copy of the next day's menu is taken around to the wards and from this the patient makes his choice of entree.

There are second servings available on everything except milk, because the cost and trouble of procuring an extra amount of milk makes this unfeasible. Even so, milk, chocolate milk, or buttermilk, are served at each meal.

This policy of serving a wide variety of foods was instituted at the hospital 6 months ago. It has enjoyed overwhelming success by cutting food costs, lowering food waste, and increasing the morale of the patients and staff by offering a choice of food comparable to any stateside commercial establishment.

To make any plan of this type a success there must be good management, which includes good preplanning, and scrupulous following of recipes. Preplanning of meals provides for full utilization of food from one meal to the next, and without the strict following of recipes, the cost of food per serving is raised.



The recipes used here are taken from the Navy Recipe Service, the Army Cook Book, The Cornell University Quantity Food Recipes, taken from a coursebook offered by Cornell University, and from many current stateside magazines such as "The Ladies Home Journal" and "The American Home."

The procurement of food is done in a different manner than at any other activity, because of the large number of special diets.

The majority of the food is purchased from the Naval Supply Depot stocks and the procurement officer also takes note of the monthly surplus lists put out by the Naval Supply Depot, thereby enabling the Food Service Division to procure and serve food that would not ordinarily be thought of when making out the standard order. The result of this policy is that the department is able to give added variety to the menu, sometimes making goose or Smithfield ham available. Special items of food for the liquid, low-fat, low-calory, and high-protein diets are purchased at the base commissary store.

Foods such as radishes, tomatoes, onions, lettuce, potatoes, parsley, and chestnuts, that are not available from standard Navy stocks, are purchased on the open market from approved Japanese sources.

Purchases on the open market are inspected by the Army before delivery and are also put through a rigid inspection test by the sanitation department of the hospital. This double check insures that the food served is of the highest quality. By using fresh produce, added nutritional value is gained that is ordinarily lost when canned vegetables are served. An added benefit is that inviting salads can be added to enhance and balance the meal.

The Food Service Division also conducts a food service training program which permits the cooks to fulfill all the requirements of their rates and enable them to expand their own initiative in better food service. Training films, lectures and demonstrations are also used in the training of the Japanese personnel.

This training phase includes: butchering, pastry making, management of a large mess hall, meat inspection, and nutrition. (Food Service Branch, BuMed)

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#### Postural Equilibrium in Man Following Unilateral Labyrinthectomy

A pilot flying freely in space is confronted with many problems in orienting himself to the plane, the earth, other members of his squadron, and possibly still other objects. This spatial orientation is a learned function and is dependent upon visual, vestibular, and other cues. Considerable work has been done at the U. S. Naval School of Aviation Medicine at Pensacola on the precise manner in which vestibular cues from the inner ear con-

tribute to the pilot's total impression of his position in space. Past investigations have been directed toward both static and dynamic equilibrium. Unfortunately, they have been limited by the inaccessibility of the inner ear embedded in a bony portion of the skull and by the undesirability of generalizing from the findings of animal studies to man. The present study is one of a series utilizing patients who have had one labyrinth destroyed by surgery for therapeutic reasons. It is concerned with the ability of such persons to maintain postural equilibrium under static conditions involving the presence or absence of visual cues. It was found that adaptive processes following labyrinthectomy compensate for any possible differences attributable to unilateral nonfunctioning of the labyrinths. Hence, such tests would be valueless as diagnostic aids under these conditions. Insofar as the findings contribute to a fuller understanding of vestibular function they are of value in clarifying how pilots may be using vestibular cues in the complex spatial orientation process. (Research Project Report NM 001 059.01.34, 16 Jan. 1953, J.I. Niven, and CAPT A. Graybiel (MC) USN)

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#### Scientific Assembly of the American Medical Association

The Chief of Naval Personnel has approved this assembly for the awarding of retirement point credits to Reserve Medical Department officers who attend the Scientific Assembly in New York City on 3 and 4 June 1953. Authority is granted for the issuance of appropriate duty orders without pay. One retirement credit will be awarded for each of the two (2) sessions attended provided the duration of the meetings are at least two (2) hours and the personnel concerned are not on the Inactive Status List. Not more than one retirement point will be credited for any 1 day. (ResDiv, BuMed)

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#### Training Courses for Naval Reserve MC, MSC, HC, and Ensign, Probationary (Medical) Officers, First Quarter Fiscal Year 1954

Training courses of 2 weeks' duration for MC, MSC, HC, and Ensign, Probationary (Medical) officers will be available during the first quarter, Fiscal Year 1954. These courses have been designed to provide active duty for training, information, and recommended techniques to be employed in specialized fields closely related to naval medicine which are not readily available to such officers in their civilian pursuits, but invaluable to their respective functions in the event of mobilization.

A class in Insect and Rodent Control is scheduled to convene at the U.S. Naval Air Station, Jacksonville, Fla., on the first and third Wednesday of each month. The 1st, 3rd, 4th, 6th, 8th, and 9th Naval Districts and



the Potomac River Naval Command have been assigned a quota for this course during the quarter. The course is under the immediate supervision and direction of the U.S. Navy Preventive Medicine Unit No. 1.

A similar course is scheduled to be conducted at the U.S. Naval Air Station, Alameda, Calif., for the benefit of male medical personnel residing in the 11th, 12th, and 13th Naval Districts. Information and convening dates may be obtained by addressing an inquiry to the Commandant, Twelfth Naval District, or the Commanding Officer, Naval Air Station, Alameda, Calif.

Ensign, Probationary (Medical) officers who desire to perform 2 weeks of active duty for training with pay and allowances at a naval medical research facility or a naval hospital during their summer vacation should submit their request to the Commandant of their home naval district at the earliest practicable date. This active duty for training program is scheduled to begin on 6 July 1953. (ResDiv, BuMed)

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#### From the Note Book

1. Rear Admiral Lamont Pugh, Surgeon General of the Navy, was the guest speaker at a Public Health Forum of the Harvard School of Public Health at Boston, Mass., on 28 Apr. 1953. The Surgeon General spoke on the subject "The Global Concept of Preventive Medicine in the U.S. Navy." (TIO, BuMed)
2. Rear Admiral Clarence J. Brown, Deputy and Assistant Chief of the Bureau, left Washington on 17 Apr 1953 to visit Navy Medical Department facilities located in Europe, Africa, and the Near East. (TIO, BuMed)
3. The scientific session of the Section on Military Medicine of the American Medical Association will be conducted on 3 and 4 June 1953 during the one hundred and second annual meeting in New York City. The program has been arranged under the chairmanship of Richard A. Kern, M.D., Temple University Hospital, Philadelphia, by Col. Sheldon S. Brownton, USAF (MC). Dr. Kern has requested that all medical officers of the military departments attending the meeting register for the Section on Military Medicine. Eligible Reserve officers of the Medical Corps will be given retirement point credits (see page 26). The Military Scientific Exhibits have been assembled under the direction of Captain Robert V. Schultz (MC) USN, Washington, D.C.
4. The Vanderbilt University School of Nursing at Nashville, Tenn., has been approved as the fifth nursing school to participate in a cancer control project in the form of a pilot study to improve cancer teaching in the basic nursing curriculum. Award of this new grant and the renewal of a similar grant made last year to the Boston University School of Nursing have been approved by the National Advisory Cancer Council. (Cancer Control Letter, H. E. W.)

5. Although excision is an established method of treatment for aneurysm of peripheral arteries, it has been applied to aortic aneurysms only in isolated instances. When possible, excision of the sac and preservation of aortic continuity constitute the ideal treatment. (Surg., Gynec. & Obst., Apr. 1953, H. T. Bahnson)

6. Two cases of a relatively obscure endomyocardial affection of unknown etiology (recurrent parietal thrombo-endocarditis) are reported. Each case had a similar unresponsive clinical course with chronic myocardial failure and atypical signs and negative cardiac histories. Each case had one common post-mortem finding, namely, a sclerosis and thrombosis of the parietal endocardium of the left ventricle. (Circulation, Apr. 1953, C. McNicol, H. E. MacMahon, A. S. Benenson, and T. Winship)

7. Dr. James D. Hardy of the Department of Physiology at the Medical College of Cornell University will assume the position of Director of Research at the Naval Aviation Medical Acceleration Laboratory on 1 July 1953. In addition to his duties at this laboratory, Dr. Hardy will function as Professor of Physiology at the University of Pennsylvania School of Medicine where he will participate in the teaching program. Dr. Hardy is well fitted by training and interest for his new job as Research Director. His training in physics (Ph. D., Johns Hopkins, 1930), his interest in biophysics and physiology, and his service with the Navy during World War II, all contribute to his interest in the work being carried on at the Naval Aviation Medical Acceleration Laboratory.

8. A new publication, "Maximum Permissible Amounts of Radioisotopes in the Human Body and Maximum Permissible Concentrations in Air and Water, is available on order from the Government Printing Office, Wash., D.C. (N.B.

9. "Pararheumatic" arthropathy should be suspected in patients showing: fibrositis associated with fever; an acute or subacute polyarthritides of long duration with a downward course; in fulminating deforming polyarthritides; in "atypical" rheumatoid arthritis; and in arthritis with bizarre cutaneous lesions. (Ann. Int. Med., Apr. 1953, H. H. Friedman, S. Schwartz, M. Trubeck, and O. Steinbrocker)

10. An analysis of 1,883 report-card days recorded by 18 patients showed that heparin has no greater effect than a placebo in the control of effort angina. (Am. J. Med., Apr. 1953, S. H. Rinzler, et al.)

11. An evaluation of deafness in 600 shipyard workers is presented in Archives of Otolaryngology, Mar. 1953, A. I. Goldner.



BUMED NOTICE 6120

13 Apr 1953

From: Chief, Bureau of Medicine and Surgery  
To: Ships and Stations Having Medical Corps Personnel Regularly Assigned  
Subj: Standard Form 88, Report of Medical Examination; completion of item 77

1. In completing Standard Form 88, regardless of the purpose of examination, item 77 shall indicate the examinee's physical ability to perform active duty at sea and on foreign service, or in the field, as appropriate.

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BUMED INSTRUCTION 6222.2A

15 Apr 1953

From: Chief, Bureau of Medicine and Surgery  
To: All Ships and Stations  
Subj: Venereal disease prophylaxis measures  
Ref: (a) BuMed Inst. 6222.3

1. This instruction discontinues the use of certain chemo-prophylactic agents in venereal disease prevention, and eliminates the designation of spaces aboard ships for prophylaxis only, and changes the name of "pro station" ashore to "aid station."

\* \* \* \* \*

BUMED INSTRUCTION 6820.6

16 Apr 1953

From: Chief, Bureau of Medicine and Surgery  
To: Ships and Stations Having Medical Corps and/or Dental Corps Personnel Regularly Assigned  
Subj: Subscriptions to periodicals; procurement of  
Ref: (a) BuMed Inst. 6820.1  
(b) BuMed Inst. 4210.1A

1. This instruction promulgates procedures to be followed in the procurement of subscriptions to professional medical and dental and technical periodicals, when such subscriptions are chargeable to the appropriation, Medical Care, Navy.

## BUMED INSTRUCTION 7303.2

16 Apr 1953

From: Chief, Bureau of Medicine and Surgery  
To: All Shore Stations Having Medical and/or Dental Facilities  
Subj: Annual Estimates of Expenditures, Appropriation 1741002, Medical Care, Navy, 1954  
Ref: (a) Catalog of Naval Shore Activities, OPNAV P213-105  
(b) BuMed Inst. 4210.1A  
(c) BuMed Inst. 4700.1A

1. This instruction revises the criteria for the preparation and submission of annual estimates of expenditures under the appropriation, Medical Care, Navy 1741002.

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## BUMED INSTRUCTION 6100.1

16 Apr 1953

From: Chief, Bureau of Medicine and Surgery  
To: All Ships and Stations Having a Flight Surgeon or Aviation Medical Examiner  
Subj: Physical qualification certification by the Civil Aeronautics Administration of Naval and Marine Corps Personnel  
Ref: (a) Chief, Medical Division, Civil Aeronautics Administration  
ltr of 22 Oct 1951  
(b) Chief, Medical Division, Civil Aeronautics Administration  
ltr of 1 Aug 1951  
(c) Article 15-69 (12), ManMedDept

1. This instruction is promulgated for guidance of flight surgeons and aviation medical examiners with respect to physical examinations and physical qualifications, and processing of candidates for Civil Aeronautics Administration Second Class Airman's Medical Certificate. BuMed C/L 52-20 is cancelled.

\* \* \* \* \*

## BUMED INSTRUCTION 1510.3

21 Apr 1953

From: Chief, Bureau of Medicine and Surgery  
To: All Ships and Stations Having Dental Personnel



Subj: Advanced specialized courses of instruction for enlisted dental personnel; procurement of candidates for

1. This instruction informs naval activities of a newly established advanced training program for enlisted dental personnel and describes the courses in the program, candidates' eligibility requirements, the procedures to be followed in applying for admittance, and the action to be taken on applications.

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BUMED INSTRUCTION 4210.1A

21 Apr 1953

From: Chief, Bureau of Medicine and Surgery  
To: Stations Having Medical/Dental Personnel Regularly Assigned  
Subj: Purchase requisitions under appropriation, Medical Care, Navy  
Ref: (a) Chapter 24, ManMedDept  
(b) Volume 2, BuSandA Manual  
(c) BuMed C/L 51-142  
(d) BuMed Inst. 4440.1  
(e) BuMed Inst. 5217.1  
(f) BuMed Inst. 6820.6  
(g) BuMed Inst. 10490.1  
(h) SecNav ltr N4-1 of 16 Nov 1948; NDB Cum. Ed 1948, 48-879, p. 108  
(i) BuDocks C/L No. 50-4; NDB Jan-Jun 1950, 50-134, p. 305

1. This instruction revises and reissues instructions on preparation and submission of purchase requisitions under the appropriation, Medical Care, Navy. BuMed C/L 51-156 and 52-15 and BuMed Inst. 4210.1 of 24 Sep 1952 are cancelled.

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BUMED NOTICE 6150

21 Apr 1953

From: Chief, Bureau of Medicine and Surgery  
To: Ships and Stations Having Medical Personnel Regularly Assigned  
Subj: X-ray films (medical) of Army and Air Force personnel; disposition of  
Ref: (a) Art. 23-303(6)(d), ManMedDept

1. Effective immediately, when Army or Air Force personnel are discharged to duty from or die in a naval medical activity, all x-ray films shall be transferred to the Kansas City Records Center; 601 Hardesty Ave., Kansas City 1, Mo.

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BUMED INSTRUCTION 7303.4

22 Apr 1953

From: Chief, Bureau of Medicine and Surgery  
To: All Ships and Stations

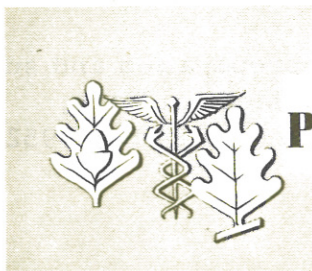
Subj: Medical Department funds for ships and fleet operating units

Ref: (a) Chapter 24, ManMedDept  
(b) Para 023304, NavComp Manual  
(c) Para 25833-2, BuSandA Manual

Encl: (1) Listing of Quarterly Target Amounts  
(2) Format for Report of Estimated Obligations

1. This instruction revises instructions to ships and fleet operating units on utilization of funds under the appropriation, Medical Care, Navy. BuMed C/L 52-51 is cancelled.

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## PREVENTIVE MEDICINE SECTION

### Communicable Disease Control

#### Use of Gamma Globulin for Immunization of Dependents

The Armed Forces Medical Policy Council issued a memorandum to the Surgeons General of the Army, Navy, and Air Force on 13 Mar 1953, as follows:

"The Department of Defense has released a quantity of gamma globulin to the American Red Cross. The military requirements have been retained,



including that for dependents. . . . . The policy of the Armed Forces Medical Policy Council is that immunization of dependents against paralytic poliomyelitis should be on the same basis as provided the local community under the National Allocation Plan. Liaison should be maintained with the state, county, and city public health authorities in all areas where military dependents are treated at military installations. "

Each of the Armed Forces is preparing a supply of gamma globulin to meet expected requirements during the forthcoming season of increased prevalence.

An official notice will be published in the near future setting forth the method of distribution of the material, the indications for its use, and the dosage.

\* \* \* \* \*

#### Food-borne Illness Traced to Infections on Hands of Workers

Epidemiologic investigations of outbreaks of food poisoning and food intoxication received by BuMed have repeatedly traced the cause to infections on the hands of food-service personnel. These investigations bring to light the importance of constant vigilance in inspecting food-service workers for the presence of infected lesions. Early detection of lesions and removal of food handlers from such duty until cure is effected will serve as an important measure of prevention of diarrhea both afloat and ashore.

The following facts were obtained from a recent report by a naval activity having an outbreak of food intoxication: One hundred and ninety-four individuals were admitted to the sick list; 3 were sufficiently ill to require transfer to a naval hospital. The first to be stricken and admitted were the most severely ill. Of the first 100 men, 10 were prostrated. Two had markedly bloody vomitus and one, bloody bowel movements. These 3 men were admitted to the hospital under emergency circumstances; after treatment, recovery was rapid. Other patients showed moderate degrees of shock with cold, clammy skin, weak pulse, and low blood pressure. There were complaints of abdominal pain, vomiting, headache, vertigo, and weakness, with various degrees of diarrhea.

The source of the infection was traced to the serving of creamed ham and eggs which had become infected during preparation by contact with the infected finger of a cook. The causative organism, Staphylococcus aureus, was isolated from the infected finger, from the creamed ham and eggs, and from the vomitus of many of the individuals stricken.

The onset of the epidemic was explosive, occurring 2 to 4 hours after breakfast. Investigation of the preparation of food served at the morning meal revealed the following: The eggs were prepared 12 to 14 hours in advance of the serving time. Storage of the food in deep tubs was in such a

fashion that only the outer areas of the contents were actually refrigerated. Thus there was an incubation period of several hours under ideal conditions. The food served as excellent culture media, and moisture and temperature were favorable for bacterial growth.

\* \* \* \* \*

### Amebiasis in Tropical Areas

In a survey of stools for Endamoeba histolytica a group of 100 individuals chosen at random in a rural Egyptian community was studied intensively by personnel of NAMRU 3. An incidence of 93% was obtained. Included in the group were 48 males and 52 females, 28 being in the age group 0 to 10 years, 60 in the group 11 to 40 years, and 12 over 40 years. Samples were collected in the field and an intensive search for parasites was made in the laboratory.

In the 100 individuals studied, 74 were found to have cysts of E. histolytica in the first stool examination; 11 were found positive on the second stool examination; 6 on the third; 1 on the fourth; and 1 on the sixth. Three were negative after 6 examinations. Of the 93 individuals with cyst-confirmed positive stools, 43 were males and 50 females ranging through all age groups. Of the remaining 4 individuals, 2 had trophozoites in their stool but cysts have not yet been found in 5, 4, 2, and 1 stool examinations.

The high incidence is astounding, but how much actual disease can be ascribed to it cannot be determined at present. Diarrheas and dysenteries are extremely common in these villages but it is probable that the majority are the result of bacterial infection. (Journal of the Egyptian Public Health Association, Vol. 27, No. 3, 1952, J.M. Weir, et al.)

\* \* \* \* \*

### MIF Stain-Preservation Technic

In a recent issue (6 Mar 1953) of the Medical News Letter a general description was given of a new staining-preservation technic that appears to have many advantages from the naval standpoint in regard to the identification of intestinal parasites, especially intestinal protozoa, in fecal specimens. Aboard naval ships or in activities where the proper facilities do not exist for stool examinations for intestinal protozoa and helminths, it is possible by the newer technic to place small amounts of feces in a Kahn tube with a preserving solution and forward the specimen through the mail to the Naval Medical School.

The stain is made up of merthiolate, formaldehyde, and Lugol's solution, materials which are almost universally available at medical activities. Medical officers who are interested in its exact composition and who wish to



forward specimens by mail for diagnoses may address requests for instructions to the Preventive Medicine Division, BuMed.

\* \* \* \* \*

### More Rapid Identification of Enteric Pathogens

Enteric pathogens can be isolated and identified from stools in 2 days or less instead of the usual 3 or 4 days. The method involves fishing colonies from the primary plates into small lactose-sucrose broth tubes, incubating 1 to 3 hours in the 37° C. water bath, performing hanging drop motility and agglutination tests, and inoculating the confirmatory carbohydrates—all on the day of the fishing, thus saving a day over the customary double or triple sugar agar screening technic. Because prompt diagnosis is of real aid to both the clinician and the investigating health officer, and the procedure is reasonably simple for the trained bacteriologist, its use is recommended for laboratories engaged in diagnostic enteric work.

If the so-called microtechnics are employed in the confirmatory as well as the screening tests, enteric pathogens can frequently be identified the day of the fishing or at the latest the following morning. This more rapid variation is recommended only when enteric specimens are handled in large numbers by bacteriologists specially experienced in the field. (Am. J. Pub. Health, Mar. 1953, R. A. MacReady and M. B. Holmes)

## **Tuberculosis Control**

### Tuberculosis Control Still Needed

The author has not found any new factors recently introduced in the tuberculosis control program which offer any hope of greatly accelerating the reaching of the objective, the eradication of tuberculosis. Certainly the newer antibiotic and chemotherapeutic agents, although wonderful tools in our kit of treatment procedures, will not rapidly eliminate tuberculosis from the population. No doubt, they have been responsible to a considerable degree in reducing deaths but we are equally interested in nonfatal tuberculous disease and infected individuals who are not ill. Everyone with a naturally acquired positive tuberculin test is a potential tuberculosis patient and it is estimated there are about 15,000,000 such reactors in the United States today. The new drugs certainly do not justify retrenching in our tuberculosis control programs in any way. In fact, their availability makes it mandatory to expand rather than contract our control procedures, particularly our case-finding programs.

Tuberculosis is a completely unnecessary disease. It is a communicable disease caused by a specific micro-organism. Money spent on its

control under the guidance of competent administrators is more than returned to the general economy through eliminating loss of production by those so protected and through converting tax-dollar consumers into tax-paying citizens. Although every person must die eventually of something, tuberculosis definitely is not included in that group of inevitable fatalities. Desirable though it is to spend money on research and control programs for heart disease and other noncommunicable public health problems, it is poor economy to do so at the expense of tuberculosis control programs. (Bulletin of the National Tuberculosis Association, Apr. 1953, J. E. Perkins)

## Venereal Disease Control

### Simplification of Prophylactic Regime

BuPers Notice 1551 of 18 Mar 1953 removes 2 ozalid transparencies dealing with prophylaxis from NavPers 110052, which is a set of transparencies supplementing instruction in sex hygiene and venereal disease. The 2 ozalids, which are being removed because they show obsolete procedure and equipment, are No. 9, The Navy Tube, and No. 10, The Pro Station. Appropriate substitutions are being developed and will be issued in the near future.

BuMed Instruction 6222.2A, soon to be released to the field, deals with venereal disease prophylaxis measures. The purpose of the instruction is to discontinue the use of certain chemoprophylactic agents, including the sanitube, in venereal disease prevention; to eliminate the designation of spaces aboard ship for prophylaxis only; and to change the name "pro station" ashore to "aid station."

The recommended prophylactic regime will be simplified to the following: (1) Mechanical prophylaxis (condom); (2) urination immediately after exposure; (3) immediate and thorough soap-and-water wash of the exposed sex parts; and (4) in authorized areas, oral penicillin.

## General Sanitation

### BuShips Instruction on Dishwashing Machines

Preventive medicine personnel charged with responsibility for sanitary food service will be interested in BuShips Instruction 9340.4 of 18 Mar 1953, which has as its purpose the improvement of maintenance and the reduction of health hazards of dishwashing machines. All naval vessels having dishwashing machines installed on board, when given either a Naval Shipyard availability or tender availability for upkeep repairs, are instructed to include an item in their work lists to have the repair activity inspect, repair,



and check the operation of the equipment as outlined in NavShips 250-522 (BuShips Bulletin "Operation and Maintenance of Dishwashing Machines").

Some dishwashing machines have their fresh water filling inlets about 2 inches above the overflow level. Occasionally the overflow drain becomes blocked and the water level rises above the filling inlet. Under this condition, dirty water may be siphoned back into the fresh water system. It is requested that all dishwashing machines be inspected and if the filling inlet is not above the bottom of the door opening (spill level) the filling inlet piping should be extended to bring it approximately 2 inches above the bottom of the door opening. This inlet should be a "goose neck" with the opening directed downward so as not to trap water from the sprays. This item of correction is considered to be within the capabilities of the forces afloat. The machines should be inspected and if filling connection openings are not 2 inches above the bottom of the door opening, a request for a shipalt should be submitted to the Bureau of Ships.

It has been observed that on some naval vessels provision is made for filling the dishwashing machines only with fresh cold water. The machines should be inspected and if they are not provided with hot-water filling connections, a request for a shipalt should be submitted to the Bureau of Ships. This will improve the operating efficiency and reduce the time for washing the eating utensils for each meal.

\* \* \* \* \*

### Food Inspection Activities

One Navy Preventive Medicine Unit reports the following activities:

During the latter part of 1952, it was noted that the returnable metal cans used by several ice cream manufacturers to deliver ice cream mix to naval activities showed signs of progressive neglect. Many were badly dented, and others had open seams and showed signs of rusting. In an effort to correct this situation, sanitation officers were requested to inspect the empty cans closely and condemn those found not meeting standards. For cans requiring attention, the activity supplied 3" by 5" white cardboard tags stamped in red:

THIS CAN IS CONDEMNED  
Unfit as a milk container

Bent \_\_\_\_\_  
Rusty \_\_\_\_\_  
Open seams \_\_\_\_\_  
Inspector \_\_\_\_\_

U. S. Navy Preventive Medicine Unit No. \_\_\_\_

In addition, letters were sent to the dairies informing them of the action and requesting their cooperation in correcting this public health hazard. These methods were extremely successful. The possibility of using single-service paper containers is being investigated for the future.

Signs of rodent infestation of some bakery products delivered to the naval base were reported to the activity for investigation, with the information that several of the cakes had been chewed and mice pellets found in the shipping cases which came by steamer. Because the geographical location of the plant prevented actual inspection by the activity, the U. S. Food and Drug Administration inspector was notified. After an investigation by that agency, it was reported that infestation was taking place either aboard the steamer or at the pier prior to delivery. Corrective action was taken.

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#### Desalting Water by Use of Ion-selective-type Membranes

The problem of changing salt water into fresh, always of interest to the Navy, has come into prominence again because certain selective-type membranes which are used in one process have been vastly improved and are now available. These membranes are made of ion-exchange resins and together with the use of a direct current of electricity will permit ions of only a certain charge to pass through. Ions of opposite charge are repelled.

In actual operation, the raw water flows into an enclosed unit consisting of cells made up of these selective membranes. The end cells are provided with terminals for connection to the electrical currents. As the water and current pass through the unit, the liquid in alternate cells loses its salt content and becomes potable. The liquid in the remaining cells picks up this salt and becomes saltier than the original raw water. This is the result of proper arrangement of the selective membranes. By increasing the electrical current, or the physical size of the number of these cells, the rate of desalting can be increased. The effluent from the unit consists of two sections. One portion is the desalted potable water, the other portion is the water with the increased salt content. The usual ratio of these portions is about 2 to 1, respectively. In some cases, getting rid of the latter portion may present a problem.

At present, there are two membrane manufacturers. Both have small laboratory models of desalting units in operation. The Bureau of Yards and Docks is watching closely the advances in this field and expects, in the near future, to place a development contract for a unit having an output of about 40 gallons per hour of potable water. (BuDocks Technical Digest, Dec. 1952)

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## Insect and Rodent Control

### Resting Habits of Flies

Diurnal and nocturnal observations of fly resting habits in urban areas were made in the vicinity of Pharr, Tex., from January 1950 to June 1951 and in Savannah, Ga., during a short period in the summer of 1950.

In both areas, ground surfaces and scattered garbage were the principal daytime resting surfaces for all observed species except Drosophila. Likewise, grasses, weeds, trees, and shrubs represented the most important nocturnal resting surfaces for all species except Drosophila.

Based on these studies, residual spray operations for urban fly control should include the treatment of grasses, weeds, shrubs, the lower limbs of trees, the interior of privies, and garbage cans and their immediate environs. In the Pharr area, the interior of utility buildings should also be included. The spraying of outbuildings or the outsides of any structures was not indicated.

The high concentration of flies in preferred resting places at night suggests that selective space spraying of these resting places at night might give more efficient fly control than present daytime space spraying procedures.

Musca domestica was the dominant species (97%) observed in studies of fly resting habits in rural areas near Savannah, Ga., 1950-1951. During the daytime hours only small percentages of the flies were observed resting on surfaces which are normally sprayed. In unscreened houses the greatest concentrations of flies during the day were found in the kitchens. Repeated all-night observations showed that flies remained in one place during the entire night.

Screens were indicated to be more than 97% effective in preventing flies from gaining entrance into homes. On unscreened premises approximately 90% of the flies were found resting in the houses at night throughout the year.

Residual spray applications for fly control on rural premises should include the treatment of porches, the lower portions of trees and shrubs adjacent to houses and animal shelters, barn interiors, and the ceilings and upper portions of the walls of unscreened dwellings. The high concentrations of flies at night in relatively small areas suggest the possibility of controlling flies economically by the selective application of space sprays at night. (Am. J. Trop. Med., Nov. 1952, Maier, Baker, Bogue, Kilpatrick, and Quartermann)

\* \* \* \* \*

## Training

### On-the-job Inspection Training

Preventive Medicine Unit No. 2 at Norfolk, Va., is providing its personnel with 2 weeks of on-the-job inspection training in the field of milk sanitation. Inspections of pasteurization plants and dairy farms are well covered. The arrangement for training was worked out with the Norfolk Health Department as a means of acquainting the personnel with methods and practices of civilian sanitary inspectors and represents the beginning of a long-range program with other health agencies which should further aid in maintaining liaison and cooperation with them.

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